

The Privatisation of Military Force: *Economic Virtues, Vices and Government Responsibility*

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The article examines aspects of privatisation in the process of defence production and supply from an economic point of view. It argues that the scope and rationale for the privatisation of military output has expanded with the changes in the mode and style of warfare and the decline of defence budgets evidenced in the post-Cold War era. The article proposes that limited private production can be both cost-effective and efficacious, provided that the contracts for that service, and the duties described therein, are sufficiently specific. Privatisation is not, however, a panacea for resource misallocation and not necessarily an organisational structure that provides appropriate incentives to firms, consumers and the state. Viewed from the perspective of economic theory, the article concludes, privatisation of military outputs seems to have some, but quite limited, viability.

'[...] It has always been the deliberate opinion of the wise, that nothing is so infirm and fleeting as a reputation for power not founded upon a national army, by which I mean one composed of subjects, citizens, and dependants, all others being mercenary or auxiliary.' Niccolo Machiavelli, *The Prince* (1514)

Military force and the scope of privatisation

'If we wish to remain the world's policeman, we must be prepared to maintain a large Army and even larger reserves, to invest in air-lift and sea-lift, and we must be prepared to spill American blood on the ground in many distant conflicts, including this one'.¹

'At present, there is no legislative prohibition or regulation which deals with private military companies, and they are therefore [...] entitled to carry on their business within the law'.²

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'[...] apart from producing things that the PLA itself needed, such as guns, the soldiers diversified and began running all sorts of other business. These ranged from telecom ventures, pharmaceutical companies and stockbroking firms to nightclubs and brothels [...] The Chinese State press recently said that the PLA's commercial empire was worth 50 billion yuan (\$6.0 billion) with annual profits one-tenth of that'.³

'The government's defence research laboratories could be offered on the stock market within two years under privatisation proposals [...] the Defence Evaluation and Research Agency [...] should be opened to private investment although the ministry would retain a big stake'.⁴

'Privatizing the US Defence Department's vehicle shipping service for civilian and military personnel has resulted in more vehicles arriving on time, according to program managers'.⁵

Do economists have a particular *weltanschauung* regarding the privatisation of military force? The disparate statements introducing this article reveal how multifaceted and complex the issue of military force privatisation is. The recent conflict in the Balkans and the fragile cease-fire in Kosovo raise many profound questions about the role of NATO and its economic and political commitment to intervention of this type in the future. In the avowed pursuit of humanitarian objectives, NATO in general, and the United States in particular, are confronted by an array of deterrents to such military action. Employing the coldly emotive language of economics, both the cost of such future intervention⁶ and the shadow price of death attached to the inevitable casualties loom large in the calculations of political decision-makers.⁷

With such constraints, it is not surprising that non-state military actors in the form of private military companies (PMCs) apparently were willing to enter into the conflict in support of the Kosovo Liberation Army (KLA). The offer of privatised military intervention was not confined to one side of this conflict, and reports of Russian mercenaries, in or out of the Red Army, travelling to Serbia and ready to fight against an invading NATO force, were credible. Official distaste for, and public rhetoric against, private military force cannot disguise the potential attraction of private military assistance if such assistance should be both financially and morally less costly in an era of constrained defence budgets.

The confusion and controversy surrounding the role and activities of PMCs such as Sandline International have elevated and widened the debate concerning state regulation and corporate operations in the privatised delivery of military force. The brokering of arms and ammunition by Sandline International into Sierra Leone has been well documented both in and outside of Parliament⁸ and raises profound questions about ownership, authority, implementation, regulation and the pricing of military force.

In examining the *modus operandi* of Sandline International and other private military firms, for example, Executive Outcomes (EO), one can paint a picture of

the state struggling to contain and regulate financially motivated mercenaries who may, intentionally or inadvertently, subvert national foreign policy objectives. This heroic image can quickly be transformed into a more Machiavellian vision of the state countenancing the activities of PMCs whose operations are in tacit support of the operation of multinational mineral, diamond and oil companies in less developed countries. Political instability can ferment economic instability raising world mineral, diamond and oil prices to the benefit of multinational companies.

The notion that military force may spawn vested economic interests is a theme well understood by the Chinese. The spirit of self-sufficiency, inculcated into the Chinese army during the 1940s, underwent a metamorphosis in the 1970s when as many as 20,000⁹ PLA military companies became more entrepreneurial and directly engaged in commercial (and sometimes illegal) activities.

Western examples of such overt interaction between military force and the private sector are less dramatic. Regardless of whether the focus is upon the UK's Defence Evaluation and Research Agency [DERA] or the Department of Defence's vehicle shipping service for civilian and military personnel, the privatisation of military force provokes contradictions. At one level, it can generate potential cost saving but at another level it can lead to a loss of cohesion, commitment and morale in the production and delivery of such force.

The adoption of wider and more diffused international responsibilities has generated new demands for publicly provided military force. However, both before and after the end of the Cold War, western governments have presided over substantial reductions in real defence budgets (notably in equipment).¹⁰ Furthermore, the changing requirements of military force projection generated by a greater portfolio of commitments, (for example, peacekeeping, peace enforcement and strategic and humanitarian intervention in Kuwait and Kosovo), have added their own pressures.

Budgetary decline and the reshaping of strategic interests have consequently underpinned industrial change and manpower contraction in national defence industries. In part, this metamorphosis has been demonstrated in corporate consolidation and product diversification within the defence industrial base. A consequence of such reorganisation has been the ability and willingness of private firms to bid for contracts to operate and manage government-owned defence facilities.

Budgetary pressures and the desire to reduce defence support costs¹¹ have induced governments to participate in a contractual *pas de deux* that increases the scale of privatisation, particularly with respect to *inputs* into the production of military force. This is a more prosaic form of military force privatisation than that implied by the extra-territorial activities of PMCs,¹² but intra-territorial privatisation initiatives of this kind are, economically, of growing importance.

The meaning and scope of privatisation

Which goods or services should governments provide? Which should be provided privately? In the context of military force, these questions have two principal dimensions.

Firstly, the dominant neoclassical economics paradigm views national defence as a production process. The projection of military force is an output that depends upon a group of inputs such as aircraft, ships, vehicles, people, etc. As with many goods, different combinations of inputs can be employed to produce the same level of output. The purposes of such output (e.g., to protect the homeland, to project power abroad, and to protect and embassy) will be determined by the Defence Establishment and, in principle, can be accomplished with different mixes of people and weaponry. Within limits,¹³ military hardware can be substituted for people, smaller numbers of hi-tech weapons can be substituted for larger numbers of less sophisticated weapons and smaller numbers of well-trained people can be substituted for larger numbers of less well trained.¹⁴

Secondly, privatisation of the production of *inputs* used in producing defence services is widely practiced and exemplified by weapons systems, vehicles, ammunition, clothing etc., produced by private firms under contract to the government. In the absence of the Draft (USA) or Conscription (UK), individuals, too, voluntarily contract with the military to become members of the armed forces, but their training is implemented by government employees rather than through a private contract.

There is a voluminous literature in professional economics¹⁵ devoted to the private production and provision of weapons systems (a crucial input in the production of military force), and the primary issues are discussed below. Privatisation of military *output*, on the other hand, is a radical concept little discussed within mainstream economics literature and rarely practiced. A beleaguered government (e.g. in Sierra Leone) may specify a military objective and contracts with a private firm to deliver this objective. The recent furore in the United Kingdom concerning the lack of accountability and regulation of PMCs in providing services to foreign governments¹⁶ gives rise to a number of important economic themes, which are explored below.

The case for the privatisation of inputs

The pivotal economic criteria for determining which goods and services should be privately or publicly provided are efficiency and innovation. Production is deemed to be efficient if the least costly mix of inputs is employed in producing a given output. Innovation implies the invention and introduction of new technologies and new methods for producing outputs. The case for privatisation is strong if private sector production of a *given level of output* is more efficient and more innovative.

The superiority of private provision will be established if the structure and distribution of incentives within private firms create efficiency and innovation. Governments will contract either with public employees or with private firms who then hire and contract their own labour. In both situations, contracts must be designed to provide appropriate incentives. If a contract can be developed that is neutral with respect to public or private production, then the government will be indifferent in its choice of contract, based on efficiency and innovation criteria. However, what difficulties arise in the contracting process?

Considerable effort in economics has been devoted to developing a Theory of Contracts, which yields an understanding of this question. In a seminal paper, Ronald Coase (1937) offered an explanation of a fundamental conundrum associated with the production of goods and services. Coase inquired as to why the internalisation of economic activity within firms and organisations was so pervasive, given the well-attested optimal resource-allocating properties of markets. His conclusions emphasised the relative costs associated with the coordination of transactions within firms and across markets. If imperfect information raises the transaction costs of market exchange, production may be more efficiently coordinated within formal organisations and not informal markets. Oliver Williamson (1975, 1979 and 1985) deepened the understanding of transaction costs by arguing that the optimal institutional arrangement and governance associated with any transaction will depend upon certain characteristics: the asset specificity; uncertainty; complexity and frequency of the transaction. As a recent consideration of this proposition suggests,¹⁷ the presumption in Williamson's analysis is that markets will conduct trade unless the previously identified transaction cost characteristics are sufficiently large to ensure that trade takes place internally within the appropriate organisations.

In this sense, the 'make or buy' decision is based on the calculus of transaction cost. The benefits of in-house production flow from the fact that contracts with outside suppliers incur negotiation and enforcement costs. Such contracts tend to be incomplete; they do not cover all possible contingencies. If the probability of an uncovered contingency in the contract is high, in-house production will tend to be cheaper by virtue of the bargaining costs with outside suppliers as well as the danger of a breakdown in cooperation.

However, in-house production incurs managerial and supervision costs. Managers must monitor production, and employees may have incentives to behave differently (and x-inefficiently) than managers would desire. The potential conflict between, and resolution of, these incentives take place predominantly in three main forms of privatisation.

Firstly, 'contractorisation' encompasses both 'contracting in', e.g., the Department of Defence owns the plant or other assets but the production of the goods or services is under private control and management, and 'contracting out', i.e., the Department of Defence buys goods or services directly from a private firm. The *threat* implied by contractorisation is 'market testing' when the possibility, as well as the reality, of substituting in-house production with outside agencies or firms is investigated¹⁸.

Secondly, 'leasing' may enable a Defence Ministry to postpone capital outlays on new defence equipment without sacrificing the modernisation of military force. A recent example of this phenomenon is the decision of the New Zealand government to 'fly not buy' F-16 fighters, C-130J tactical transport and other aircraft.¹⁹ There are potential financial and legal complications accompanying leasing arrangements of this kind and, additionally, manufacturers may be able to exploit monopoly power at the end of the lease.

Thirdly, the 'civilianisation' of the labour force implies a transfer of functions

from military personnel to civil service personnel. There is evidence that this substitution of labour will generate cost saving²⁰ but the wider implications of such transfer are yet to be fully understood.

There are further complications in the theory of contracts, which will be discussed later, but the essence of the case for the privatisation of inputs is clear. The compelling question is whether the private production (under government contract) of a weapons system (for example, a warship) is likely to be more efficient than production by government employees using government owned assets. The answer lies in a close examination of the possible contractual arrangements for production. If contracts can be written so that transaction costs are low, private provision under government contract is likely to be more efficient than government production; if they are high, public production is likely to dominate.

The case for the privatisation of outputs

The previous discussion was confined to military inputs, but a broader consideration of the same issues would encompass the comparative efficiency of privately and publicly produced defence services and military output. On the output side there are additional issues relating to both the feasibility of private production and the rationale for it.

The feasibility of private production depends in part on the state of weapons technology. Historical experience sheds light on this statement. During medieval times, the economics of war reflected both the changing technology and the evolving public-private mix of military force. Before the emergence of the nation state gave rise to unified foreign policy objectives and parliamentary or council sanctioning and financing of foreign wars, European nobility sought to protect their wealth and assets. This was accomplished by means of comprehensive private provision of training, weapons production, logistics and sustenance for the cavalry, the pre-eminent instrument of war. The status, dominance and superior technology of the cavalry under the control of the nobility, and ultimately the crown, were threatened, not so much by the turmoil provoked by longbow archers at the Battle of Agincourt in 1415, but by the technological displacement of iron by gunpowder. The introduction of firearms was central to the increasing capital-intensity of military production and the growing importance and size of land armies.²¹

For a time, the recruitment and use of foot soldiers and mercenaries reinforced the cavalry. Ultimately, land armies dominated the cavalry and private military force supplemented the increasingly publicly provided forces of the monarch. However, the authority, strategy and prosecution of war remained under the control of the governing elite with a restricted role for private military force.²²

In contemporary times, major weapons platforms (for example, the Joint Strike Fighter) require large, lumpy investments. The uncertainty faced by a firm in making an optimal investment decision²³ is increased in the case of a weapons platform. The financial return to such an investment will be risky because, by

nature, a weapons platform will consist of highly specialised components with few alternative uses and varying degrees of technological uncertainty. These circumstances provide the classic conditions for an asymmetric investment phenomenon known as the 'Hold Up Problem'.²⁴ The firm will be vulnerable to *post-contractual opportunism* by government that has an incentive for renegeing on or re-negotiating the contract.

Furthermore, the buyers of sophisticated defence equipment (national governments) will, at best, be few (and this assumes that issues of sensitive technology transfer are resolved and export licenses granted).²⁵ The monopsonistic/oligopolistic structure of the bargaining process between government and firm in defence acquisition gives rise to a distinctive regulatory and contractual environment.

These arguments suggest that it is unlikely that a private military firm could both procure and be equipped with strategic and major weapon systems. Of course, this does not preclude weapons of mass destruction falling into the hands of terrorist or quasi-private organisations. However, even with the legitimate private ownership of strategic weapons, the difficulty of completely specifying the contract between the private military firm and government could give unacceptable bargaining power to the firm during a crisis.²⁶ Smaller, simpler weapons and less specialised military manpower involve more divisible investment, and, arguably, have both a greater number of potential missions and employers. Therefore, a private military firm owning and employing tactical weapons and regular troops is *prima facie* more economically viable than a private military firm employing strategic weapons.

With the growing incidence of low-intensity, high frequency regional conflicts, it is possible to envisage missions that could, feasibly, be accomplished by private military force while leaving major weapons systems in government control.

Excluding political expediency, there are at least three arguments in favor of private military force. Firstly, the embarkation upon war and conflict when narrow self-interest is dominated by broader considerations (e.g., the plight of the refugees from Kosovo) may muddle the relationship between military force and its ownership in the eyes of electorates. One paradigm for analysing the consequences of such confusion is proposed by Olson and Zeckhauser. In a seminal article from 1966, they observed that members of an alliance would make financial contributions that would grow as the ratio of excludable to total benefits (excludable and non-excludable) increased.²⁷ The cohesion of the NATO alliance during the 1950s and 1960s was at times threatened by the 'free riding' behaviour of alliance members. Free-riding was often manifested in an unwillingness to pay the 'membership fees' associated with the nuclear strategic deterrent 'club'.²⁸ As the perceived threat from the Soviet Union and the Warsaw Pact countries evolved, together with the estimation of what would constitute appropriate *proportional response*, the 'outputs' from the alliance increasingly combined a joint output embodying private and public good characteristics.

The disintegration of the Soviet Union engendered an identity crisis in NATO, compounded by the enlargement of the 'club'. NATO's *raison d'être* has been

further complicated by the debate over the means and objectives accompanying the resolution of the Kosovo conflict. In spite of considerable rhetoric, the excludable benefits arising from such operations appeared elusive while the excludable costs became starkly visible. Although the aims of providing humanitarian aid to refugees and combating ethnic cleansing are indisputably laudable, these ideals are embodied within a public good where the incentive to 'free-ride' among alliance members will be strong. In circumstances such as these, private military force may offer some economic incentive in resolving low-intensity, high frequency conflicts. This assertion is predicated upon the assumption that the cost of providing private military force can be lower than its public equivalent. The validity of this proposition is to be proved but it can be argued that the greater the *publicness* of defence outputs, the greater the interest in private military solutions.

A second argument would emphasise the discrepancy in human capital costs that accompanies the private and public delivery of force. Human capital costs were estimated to have added 15% to total US budgetary costs during the Vietnam War.²⁹ It is conceivable that a tightly formulated contract for the provision of privatised manpower in conflict situations might lead to lower social values being assigned to such manpower losses if the specified contract offered economic rent in the form of 'mercenary' rewards and risks. Whether the state actively and openly could support such a contract is debatable given the electoral abhorrence that might be expressed. Unless the operation was covert, the 'Dirty Dozen' syndrome might be highly costly politically.

A third perspective would examine the costs and benefits of employing private military force in situations where strategic national assets need to be protected. Adam Smith (1776) clearly recognised that defence spending was the *sine qua non* of opulence and that without the means to protect and enforce commercial trade, contracts and assets, the wealth of nations would quickly be diminished. Whether a state is able, or would wish, to be aligned formally with private military intervention is a crucial consideration, but private economic security operations designed to inhibit terrorism directed against embassies or multinational facilities are likely to become increasingly important. Such protection is not confined to abroad. The National Defence Panel Report, published in 1997, focused on long-term challenges to US national interests both within and without the fifty states. The Army and Air National Guard and the various Military Reserves were identified as having a pivotal role in 'Homeland Defence'. The feasibility of privatising elements of these forces is an item for defence planning in the next century.

It may be assumed that there is a role for private production of some defence output and that the military tasks government might wish to accomplish provide both the rationale and feasibility of such provision. Utilising the insights offered by the economic theory of contracts, it can be shown that the cost saving argument is much weaker in support of the privatisation of defence outputs.

Measuring, or even specifying, outputs from the defence sector with sufficient precision to write contracts is problematic since unforeseen contingencies are

inevitable. For example, the United States maintains a military presence in South Korea. Is the objective to deter North Korean aggression? To deter the Chinese from acting aggressively towards Taiwan and to otherwise assist in implementing US foreign policy toward China? To assist in implementing other US foreign policy objectives in the Pacific Rim? Assume, for the sake of simplicity, that the first is the only objective and that private military force is being contracted to deliver the deterrent. If the North-South border is peaceful, presumably the objective is being achieved. But what force size and composition is necessary to achieve this deterrence? Perhaps that decision could largely or entirely be left up to the private contractor. If there is aggressive activity by the North (i.e., the deterrent fails), what re-contracting is necessary to deal with the situation? One can imagine the force necessary to bring the situation under control being beyond the capacity of the original private contractor. What criteria are appropriate in deciding whether the situation is under control? What re-contracting is necessary if it is determined that North Korean military capabilities have changed, signalling that a different mix of military assets might be needed to provide deterrence? The questions raised here suggest that in effect, transaction costs would be very high, diminishing the probability of cost saving and threatening the successful accomplishment of the specified objectives.

As suggested previously, there may be some narrowly defined military objectives (outputs) for which private contracting would be viable. Embassy protection or the protection of other assets could be turned over to private firms under contract. While the type of contingencies requiring re-contracting would be less pervasive in such cases, it is still not clear that private contracting would be advantageous. A contract would have to be carefully designed, specifying in some detail the inputs to be used to provide the protection. Such action could limit the scope for cost saving and undermine the basis for privatisation in the first place. However, it may still be cost effective if private firms continue to have an incentive to be innovative in providing the service.

Contract complexity and the delivery of military force

The formulation and implementation of contracts is paramount in determining the scale and scope of military force privatisation. What is a contract? Sherwin Rosin offers the following definition:

A contract is a voluntary *ex-ante* agreement that resolves the distribution of uncertainty about the value and utilization of shared investments between contracting parties.³⁰

By inference, the contract provider may encounter *ex post* problems in the monitoring and enforcement of a contract. Such concerns can be framed analytically within the Theory of Agency. Within this framework, the principal (contract initiator) and agent (contract deliverer) will attempt to balance the potentially conflicting goals of risk-sharing and incentive performance. How are risks to be shared and performance to be assessed in a contract for the delivery of

military force? When will an internal arrangement between government and government organisation be superior to an arrangement between government and a private firm?

Mechanisms for sharing risks will attempt to measure and incorporate explicitly the costs associated with uncertainty.³¹ In the presence of informational asymmetry, the Principal and Agent may have to contend with a combination of hidden action and hidden information.³² This uncertainty can give rise to an outcome where the value of the contract to the Principal and Agent differs *ex post* compared to *ex ante*. If a defence good or service contract is awarded as a result of an auction, the potential for the 'Winner's Curse' arises.³³ If the contract is awarded to the highest bidder, empirical studies reveal a systematic tendency toward over-valuation of the contract in the bid from the winning firm (e.g. the private provision of food and catering services for the Navy). The 'Winner's Curse' can afflict the Principal as well as the Agent. In seeking to privatise an Air Force Depot, the Department of Defence may be mesmerised by low cost bidding and award the contract to the lowest bidder. Subsequently, the 'life cycle costs' of the contract, taking into account repairs and maintenance on subsequent cohorts of aircraft might demonstrate the incompleteness and cost underestimation of the original contract.

The inability of a Principal to differentiate among a number of Agents with variegated costs exemplifies George Akerlof's (1970) famous idea of 'Adverse Selection'. The market breakdown can result from the failure of Principal and Agents to screen or signal adequately the degree of risk associated with the delivery of a product of specified quality. Even if the adverse selection problem should be dissipated, the specified contract might nevertheless engender 'Moral Hazard' behaviour. Such behaviour will typically see the Agent engage in *post hoc* contractual opportunism, modifying the performance from that anticipated at the time of the contract being signed.

Economists are able to predict the likely behaviour of government and firms within a contract by ascribing risk characteristics to the participants. The theory of Expected Utility emanates from the seminal contributions of Daniel Bernoulli, John von Neumann and Oskar Morgenstern. If a firm were seen always to reject an actuarially fair contract (based upon a probability distribution of low and high returns to the firm on completion of the contract), the firm is said to exhibit *risk aversion*. In contrast, a *risk preferring* firm would consistently accept an actuarially fair contract (a contract where the mathematical expected value is zero), and a *risk neutral* firm would be indifferent between taking and not taking a 'gamble' on such a contract. Similar risk characteristics can be assigned to governments and individual consumers and this taxonomy sets the scene for a classic contractual dichotomy.

If the Department of Defence and a defence firm embark upon a *pure cost plus* contract, the inference is that a risk neutral government transacts with a risk averse firm so that the burden of risk falls exclusively upon the government. On the other hand, a risk neutral firm transacting with a risk averse government will typically generate a *pure fixed price* contract where the risk is entirely absorbed by

the firm. In the former case, the Agent has a clear incentive to exploit and conceal private information over the best use of inputs and technology. Accordingly, the costs initially estimated can be misrepresented permitting 'x-inefficient' behaviour during production. Hence, the economic rationale for market-testing must incorporate not only transaction cost arguments underpinning the case for in-house incumbent contract delivery, but also the complexities of design, implementation, monitoring and enforcement of contracts with private firms.

Incentives in performance arising from potential competition in the market-testing process³⁴ have to be tempered by assessing the impact of bidding and rivalry upon in-house incumbent performance. Competition may reduce the likelihood of 'shirking' and other related moral hazards, but the undermining and threatened disintegration of stable teams of employees will impair morale and diminish motivation. A pivotal consideration in questioning the wisdom of outsourcing contracts is whether sufficiently taut contract conditions accompanying the specification of minimum quality and cost containment exist. In their absence, profit-maximising contract purchasers will have incentives to behave inefficiently and undermine the case for market testing.

The quality issue

A lacuna in the preceding analysis is the means by which the quality of output can be specified and measured. The relative quality of the output produced by private firms compared to that produced by government in-house is a particularly complex issue. On the one hand, there are cogent reasons why private production will tend to deliver lower quality output. On the other hand, much of the literature on weapons contracting points to production of *inefficiently high* quality production, procured at the expense of reduced quantities of weapons.

Hart, Schleifer and Vishny³⁵ discuss a situation where a private firm contracting with the government to supply a service (e.g. shopping mall security) has an incentive to minimise cost. *Prima facie*, there is also an incentive to improve quality since the latter can be the basis for the re-negotiation of a higher price. However, there is a trade-off between cost saving and quality since lowering cost typically will lower quality. If quality cannot be specified completely within the contract, the firm can reduce costs and, without re-negotiating with the government, ignore the reduction in quality. If the focus is upon the raising of quality, the firm will be forced to re-negotiate if it wishes to attain a higher price.

This imparts a bias toward cost reduction at the expense of quality. In the debate over the privatisation of public education, critics of privatisation assert that it leads to cheaper, less well trained teachers and marginalises the most difficult to educate. Nevertheless, competition among schools may promote significant educational innovation and higher quality education. It is also important to recognise that at the other end of the spectrum, government employees engaged in government-owned production neither own the assets underpinning the delivery of the product nor do they have incentives to pursue reductions in cost or improvements in quality.

In the Hart, Schleifer and Vishny model, private production is superior when

quality diminution arising from cost reduction can be contained through competition or contractual arrangements. Moreover, privatisation will be desirable, by default, when the threat of corruption and nepotism in government provision is strong; and positively desirable when an R&D environment conducive to innovation in quality is required. *Per contra*, public production is superior in cases when the quality diminution arising from cost reduction is substantial and when quality improvements are of less significance. This conclusion holds even if the design of the contract offers similar incentives for private and public employees to improve quality.

Applying this reasoning to military force, it is evident that private firms best accomplish the production of standard military inputs. The desired quality can usually be well specified so that quality degradation arising from cost saving activity will be visible and presumably preventable. This argument applies, *a fortiori*, to weapons procurement by the private sector. Admittedly, the potential for quality deterioration arising from cost saving is significant, but carefully drawn contracts can minimise this problem, and in practice the specification of major defence contracts are spelt out in copious detail. If private firms have appropriate incentives to improve quality then private production will be clearly superior.

A different conclusion emerges when examining the output of military services. In this case, it is clearly more advantageous if in-house government teams undertake production. The quality of such output may suffer as a result of vigorous cost reducing activity by a private firm and it is often difficult to specify a comprehensive contract that will obviate the diminution in quality.

The Hart, Schleifer and Vishny argument suggests that without tightly drawn specifications, private production of weapons systems lead to relatively low quality. Yet, the experience of defence acquisition in the United States points to a bias towards high as opposed to low quality procurement. Conventional wisdom dictates that the source of this bias emanates from the incentives built into contracts by politicians and bureaucrats. A well-known version of this proposition is advanced by Scherer³⁶ who argues that such incentives emphasise the maximisation of quality, the minimisation of lead-time in production but frequently do little to curb the growth of development cost. The standard explanation for the 'quality bias' in weapons acquisition is derived from the consumption benefits obtained by decision-makers and engineers in the specification of the weapons platform. However, there can be a substantial social opportunity cost to these private consumption benefits. In satisfying the manufacturer's desire for superior design and technological capability in the weapons system, this may come at the expense of a reduction in 'military preparedness'.

Rogerson³⁷ adopts a different form of argument for the quality bias; one that is embedded in the institutional organisation of decision-making in military procurement. The distinctive form of this organisation can lead relevant decision-makers to choose too high a quality and too low a quantity in pursuit of military preparedness. The bias toward quality emerges from a two person non-zero sum game played between Congress and the Military where Congress reacts to military

proposals for new weapons by choosing the level of funding that maximises the anticipated benefits from weapon acquisition. Rogerson proposes various measures to overcome this problem, including a pre-commitment to fixed and immutable budget levels and the use of overlapping jurisdictions between military services to control for inefficient and excessive weapons procurement.³⁸

The determination of quality therefore is a complex tale with varying degrees of responsibility for quality levels arising from the interaction of Congress, Military, Federal Government and Firm. However, the case for privatisation of inputs into the production of military force does not rest primarily upon the level of quality. The bedrock of the argument is the isomorphic relationship between privatisation, competition and economic efficiency. Is the privatisation of military force necessarily an arrangement that leads to the superior utilisation of scarce resources?

Competition and efficiency

The empirical literature on private versus public production suggests that private provision is economically preferable. This conclusion is not universal and depends critically upon the degree of competition as well as the regulatory environment.³⁹

Economists argue that competition creates incentives for efficiency but reduces profit, and in so doing reduces the incentives for innovation.⁴⁰ Privatisation is often seen to be an organisational structure that permits the benefits of competition to be realised. However, competition and privatisation are not synonymous. For example, one can observe several government-owned firms competing to supply the public, or several management teams competing to run a government enterprise. The crucial condition, as pointed out by Hart, Schleifer and Vishny,⁴¹ is the allocation of *residual control rights* rather than the degree of competition *per se*. If competition strengthens privatisation, it is because of the *particular* allocation of residual control rights. By inference, government regulation might improve efficiency by establishing rights that would encourage innovation.

Conclusions regarding the benefits and costs of privatisation, therefore, must be drawn carefully. Privatisation is not a panacea for resource misallocation and not necessarily an organisational structure that provides appropriate incentives to firms, consumers and the state. Competition and privatisation may engender optimal resource allocation but the economic factors in support of this proposition are control rights, transaction costs and the design and implementation of contracts.

The privatisation of military force and the role of labour

The previous discussion has hitherto ignored the issue of privatisation and the input of labour. Apart from the special case of conscription, it can be said that labour inputs are produced privately and 'sold' to government. These inputs are combined with training, weaponry and other capital inputs in the production of defence outputs. If it is a private firm that is producing defence outputs, then

individuals 'sell' their labour to that firm which in turn contracts with a government to produce a specified level and quality of defence output employing a mix of labour, training and weaponry of its choice. Of course, this simplifies the question of how members of the armed forces are actually needed and how many are employed by a state in the delivery of military force. Nicholas Owen addressed these questions in an enterprising paper,⁴² arguing that there was evidence of substantial inefficiency in the size and utilisation of the armed forces in some countries. Furthermore, he argued that the consumption of defence resources (pay, allowances, pensions, accommodation and overheads) was at the expense of superior equipment. A significant improvement in manpower resource utilisation could be achieved if steps were taken to bring about a more rational distribution of manpower (based upon historical and international comparisons) between the three primary armed services (Navy, Army, and Air Force). One of these steps is clearly privatisation.

Training is a dimension of the manpower input that offers most promise for privatisation. Fully specifying the objectives of training of armed forces within a contract seems *prima facie*, far simpler than drawing together a contract to produce a state-of-the-art weapons system. Accordingly, privatisation seems likely to be efficient. In practice, there is limited private provision of officer training in the United States for highly specialised fields. The Defence Department sends some officers to private medical schools, law schools and to other private postgraduate education programmes. It also employs individuals who have already acquired the requisite training on their own. Enlisted training and unit training are done in-house. Contracting theory, as discussed above, suggests that privatisation would be feasible. However, the case is not as clear as it would first appear. To the extent that the objective of the training is to develop *esprit de corps*, a sense of patriotic duty and a cohesive network of collective rationality of purpose, private contracting is likely to be inferior. These attributes are not easily measurable, and cost saving managers are unlikely to devote much time to them. It can be argued that they are not, perhaps, of much importance in producing an effective fighting force. Alternatively, these are the factors that make one force effective and another less so.

These arguments were propounded in the United States nearly three decades ago regarding the efficacy of a volunteer force instead of a conscripted force. Those arguing for continued conscription claimed that paying people market wages to induce them to join the military would dull the sense of patriotic duty and *esprit de corps* that makes for an effective force. Thus, while privatisation of training may save cost, it may also result in a sharp reduction in training quality.

Conclusion

In examining the case for the privatisation of military force, an economist will seek to distinguish between inputs (people, weaponry and supplies) and outputs (the objectives to be accomplished by military means). Capital and consumable inputs have long been produced under private contract while labour inputs for the most part have not been. In medieval Europe, private armies undertook

military tasks and delivered military force on behalf of the ruler, but in modern times the use of private military force has been very limited.

Capital inputs and consumable supplies will continue to be produced privately, and military services are increasingly likely to be privatised. Mounting pressure on defence budgets sharpens the search for ways to produce military inputs more cheaply. Innovations in contract design and in regulation hold prospect for saving money in existing programmes and for expanding privatisation to services previously produced in-house. Shrinking defence budgets may also lead companies to bid more aggressively for defence business and to be willing to take on 'non-traditional' tasks, even in situations where the companies must bear significant uncertainty. One defence industry trend, consolidation, both vertical and horizontal, militates against cost reduction. Consolidation is driven by changing technology and also by shrinking budgets. Although cost saving may result from consolidation, there is also reduction in competition. Empirical studies of government provision versus private provision of non-defence services suggest that competition is important in reducing the relative cost of private provision.

Leaving aside any consideration of conscription versus volunteer manpower issues, privatisation is much less advanced with respect to labour inputs than with non-labour inputs. Particularly, training of military personnel is largely done in-house. An initial appraisal would suggest that such training would make a good candidate for private provision. The objective of training (the acquisition of physical fitness, discipline and fundamental military skills in a short period of time) would seem amenable to tightly drawn contracts with few unforeseen contingencies likely to arise. However, a second look urges caution. Some objectives of military training are by their nature intangible and difficult to measure, and consequently difficult to specify fully in contracts with private firms.

Economists see enormous inefficiencies in conscription, as well as palpable unfairness, and most have argued that the benefits of a volunteer force outweigh these intangible costs. However, the gains in efficiency from privatisation of training are much smaller, and the marginal intangible cost perhaps greater, so the economic case is less clear.

It can be argued that the scope and rationale for privatisation of military output has expanded. The broader, more diffuse military objectives of NATO and western countries increase the reluctance to commit national armed forces and also impose downward pressure on defence budgets. Private forces provide the prospect of completing tasks more cheaply and also perhaps obviating the need to develop the degree of popular consensus that may be needed to commit national forces. At the same time, the nature of many of the tasks to be accomplished appears to lend itself more readily to private forces. These tasks, which can often characterised as heavily armed and organised policing, are obviously smaller and more divisible than those involved in direct armed confrontations between major powers. Further, these tasks do not require the capital commitment of strategic weapons or major weapons platforms, or the political risks involved in having these items in private hands. The fact there are outputs that lend themselves to

private provision also, coincidentally, tends to make the private production of these outputs efficient.

As noted above, private producers have strong incentives to reduce costs, sometimes at the expense of quality, since quality changes likely necessitate re-contracting. However, the need for development and use of new technologically advanced weapons is not so important in low intensity conflict situations. The undermining of quality arising from strong incentives to reduce cost is of a lesser importance, making private production efficacious. A key question remains. Privatisation is economically viable when contracts can be written with sufficient precision to minimise re-contracting. Re-contracting is expensive and time-consuming, and may thus negate the potential cost saving. Unforeseen contingencies are inevitable in any military situation. Whether there are many situations where objectives and contingencies can be specified sufficiently so that privatisation of outputs would in fact be effective is an open question but there is still scope for experiment.

In sum, there is room for further privatisation on the input side, and it is indeed proceeding in various forms. However, much of the cost saving is likely to come from improving existing Principal-Agent relationships rather than from the contracting out of inputs presently supplied in-house. On the output side, privatisation is highly controversial. The debate focuses largely on non-economic issues. Viewed from the perspective of economic theory, however, privatisation of military outputs seems to have some, but quite limited, viability. There are tasks that can be privatised, but the endemic uncertainty of virtually any military situation makes economically efficient contracting between the state and a private military firm, inevitably problematic.

- 1 'Stop the Bombing; End the War', Statement from Members of the Economists Allied for Arms Reduction Board and Associates, New York, May 7, 1999.
- 2 Second Report from the Foreign Affairs Committee on Sierra Leone, HC 116, 1998-1999.
- 3 'No longer the army's business', *The Economist*, 8 May 1999, p. 34.
- 4 *Financial Times*, 6 May 1999, p. 9.
- 5 *Defence News*, 17 May 1999, p. 36.
- 6 The economic consequences of the Kosovo crisis are spelled out in Niall Ferguson's article 'There's no such thing as a Free War', *Wall Street Journal*, 30 April 1999, A14. Ferguson argues that taxpayers will see the end of the 'Peace Dividend' and a rise in taxes to finance greater defence spending.
- 7 P. Eden, 'US Human Capital Loss in Southeast Asia', *Journal of Human Resources*, vol. 7, no. 3, 1972, pp. 384-394.
- 8 See, for example, Oxfam, *Out of Control: The Loopholes in UK Controls on the Arms Trade*, Oxfam GB Policy Paper, December 1998, and Andrew Gilligan, 'Inside Lt.Col.Spicer's New Model Army', *The Sunday Telegraph*, 22 November 1998.
- 9 'No longer the army's business', *The Economist*, 8 May 1999, p. 34.
- 10 Real national defence in the USA totaled \$319.8bn in 1990. It is projected to fall to \$231.4bn in 2000. See *Economic Report of the President*, 1999. Real defence spending in the UK is projected to fall by 3.6% in 1999 and by a further 2% during the period 2000-2001. See

- Statement on the Defence Estimates, 1998.* In 1974, UK defence spending was 6% of GDP; in 1999, this figure has decreased to 2.5%
- 11 For evidence on the escalation of defence support costs in the UK and USA, see The Ministry of Defence, *Front Line First: The Defence Costs Study*, HMSO, London, 1994, and P. Taylor *et al*, 'Defence Budget: Competing for Limited Resources', in P. Taylor, R. Fullerton and D. Kovach, eds., *The Defence Industrial Base: Economic Realities of America's Evolving National Defence*, US Air Force Academy, Colorado, McGraw-Hill Companies Inc, 1998.
 - 12 The organisations under scrutiny are, in the words of Sandline International, not 'arms dealers' but the providers of military services in the form of weapons and systems underpinned by a wider package of training, support and military hierarchy.
 - 13 Precision guided munitions, e.g. Cruise missiles, may seemingly appear to be a perfect substitute for aircrew launching conventional bombs from low-flying aircraft, but the probabilities of collateral damage inflicted upon citizens in the former, and high casualty rates from the latter, impose external constraints on the implied smoothness of the production possibility frontier
 - 14 Ridge and Smith have estimated that the elasticity of substitution between capital and military personnel in the UK was 1, implying that an x% increase in military personnel costs would be offset by an x% decrease in the number of military personnel. However, as has been pointed out by Sandler and Hartley, the methodology for this study is questionable since there is no disaggregation of military personnel data and it is assumed that the Ministry of Defence is a cost-minimiser when evidence would support X-inefficient behaviour arising from Niskanen-style budget-maximising tendencies within the MoD bureaucracy. See Dennis Mueller, *Public Choice II*, Cambridge, Cambridge University Press, 1997.
 - 15 See, for example, F.M. Scherer, *The Weapons Acquisition Process: The Economic Incentives*, Boston, Harvard University Press, 1964, and William Rogerson, 'Excess Capacity in Weapons Production: An Empirical Analysis', *Defence Economics*, vol. 2, no. 3, 1991, pp. 235-50.
 - 16 Second Report from the Foreign Affairs Committee on Sierra Leone, HC 116, 1998-1999.
 - 17 Bengt Holmstrom and John Roberts, 'The Boundaries of the Firm Revisited', *The Journal of Economic Perspectives*, vol. 12, no. 4, Fall 1998.
 - 18 Another organisational model of private production of military inputs is a 'quasi-market' or 'internal market' when private provision is simulated *within* a government organisation. See Laura Baldwin and Glenn Goetz, *Transfer Pricing for Air Force Depot-Level Repairables*, Project Air Force, RAND, 1998.
 - 19 'In New Zealand the Weapons Plan is to Fly not Buy', *Defence News*, 10 May 1999.
 - 20 Susan Gates and Albert Robbert, *Comparing the Costs of DoD Military and Civil Service Personnel*, RAND, 1998.
 - 21 During the 16th century armies rarely exceeded 30,000 but doubled in size during the Thirty Years War of 1618-48 and trebled during the wars of the 18th century.
 - 22 See John France, *Western Warfare in the Age of the Crusades 1000-1300*, New York, Cornell University Press, 1998.
 - 23 Dixit and Pindyck emphasise three essential considerations in the investment decision: (1) uncertainty over future profit streams (2) irreversibility of investment if some sunk costs cannot be recouped should the firm subsequently cancel or modify the project (3) the opportunity for the firm to delay the investment decision. See Avinash Dixit and Robert Pindyck, *Investment under Uncertainty*, Princeton, NJ, Princeton University Press, 1996.

- 24 See James Malcolm, 'Contracts, Hold-UP AND Labor Markets', *Journal of Economic Literature*, vol. XXXV, December 1997, pp. 1916-1957.
- 25 Underpinned by the *Revolution in Military Affairs* in the US, there is a widening transatlantic gap in military technology and capability that threatens not only transatlantic trade in military electronics and communications but according to some commentators, the very foundations of the NATO alliance. See David Gompert, Richard Kugler and Martin Libicki, *Mind The Gap*, Washington, D.C., National Defence University Press, 1999.
- 26 See Oliver Hart, Andrei Schleifer and Robert Vishny, 'The Proper Scope of Government: Theory and an Application to Prisons', *Quarterly Journal of Economics*, November 1997, pp. 1127-1161.
- 27 A pure public good possesses the characteristics of non-excludability (the consumption of the good by individual A does not prevent individual B from also consuming the same good simultaneously) and non-rivalness (the utility obtained by A in consumption does not diminish the utility received by B). Therefore, a pure private good is both excludable and rival.
- 28 See Richard Cornes and Todd Sandler, *The Theory of Externalities, Public Goods and Club Goods*, New York, Cambridge University Press, 1986.
- 29 B.F. Kiker and J. Birkeli, 'Human Capital Losses resulting from US Casualties of War in Vietnam', *Journal of Political Economy*, vol. 80, no. 5, 1972, pp. 1023-1030.
- 30 Sherwin Rosen, 'Implicit Contracts: A Survey', *Journal of Economic Literature*, September 1985, pp. 1144-1175.
- 31 See Derek Braddon, Paul Dowdall and Adrian Kendry, 'Organizational Reform, Market Testing and Defence', in Derek Braddon and Deborah Foster, eds., *Privatisation: Social Themes and Perspectives*, Dartmouth, England, 1996.
- 32 Eric Rasmussen, *Games and Information*, UK, Basil Blackwell, 1991.
- 33 See Richard Thaler, 'The Winner's Curse', *Journal of Economic Perspectives*, Winter 1998, pp. 191-202.
- 34 Ministry of Defence, *The Guide to Competition in Defence Services*, The Market Testing Services, London, 1992.
- 35 Oliver Hart, Andrei Schleifer, Robert Vishny, 'The Proper Scope of Government: Theory and Application to Prisons', *Quarterly Journal of Economics*, November 1997, pp. 1127-1161
- 36 Scherer, *The Weapons Acquisition Process*.
- 37 William Rogerson, 'Quality and Quantity in Military Procurement', *American Economic Review*, vol. 80, no. 1, March 1990.
- 38 It has been argued that inefficient (too much) defence procurement can be 'valuable' in the sense that it creates additional profits for defence contractors that can be channelled into lobbying politicians to support current levels of procurement. See Tyler Cowen and Dwight Lee, 'The Usefulness of Inefficient Procurement', *Defence Economics*, vol.3, 1992, pp.219-227.
- 39 Vickers and Yarrow provide a valuable survey of the principal arguments.
- 40 Andrei Schleifer, 'State versus Private Ownership', *The Journal of Economic Perspectives*, vol.12, no. 4, Fall 1998, pp. 133-150.
- 41 Hart *et al*, 'The Proper Scope of Government'.
- 42 Nicholas Owen, 'How many men do armed forces need? An international comparison', *Defence and Peace Economics*, vol. 5, 1994, pp. 269-288.